RESTRICTED CIRCULATION

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AGRICULTURAL MEMORANDUM No 699

Agroclimatic area averages - accumulated day - degrees of winter frost 1941-1970

L P SMITH

Ag. Mem 618 evaluated this parameter using minimum winter temperatures. The analysis was repeated on East Malling data to use mean temperatures of each of the four months November to February.

A multiple correlation of 0.9356 was found, using °F, namely.

$$\text{Total} = 2490 - 11.02\ T_N - 10.77\ T_D - 18.27\ T_J - 16.95\ T_F.$$

If log T was used the improvement was negligible (0.9447). Converting to °C the formula becomes approximately:-

$$666 - 19.6\ (T_N + T_D) - 33\ T_J - 30.5\ T_F.$$

This can now be applied to the areal values given in Ag. Mem. 694, with a possibility of overestimates in coastal regions. The results are given in the Appendix.

Any comments or suggestions on this paper should be referred to the author.

Meteorological Office
Bracknell

January 1975

APPENDIX AVERAGE ESTIMATED ACCUMULATED DAY - DEGREES OF WINTER FROST 1941-1970

Area		Area		Area	
England					
1A	280	19	287	38A	241
1B	282	20	291	38B	170
2	427	21	258	39A	228
3	290	22A	305	39B	166
5	285	22B	292	40	0
6A	462	23	252	41	104
6B	469	24	253	42	66
7	312	25A	241	43A	205
8	290	25B	217	43B	68
9	214	26	268	44	168
10	392	27	259	45A	139
11	323	28	259	45B	165
12	275	29	260	46	134
13	256	30	203	Wales	
14	228	31A	237	47	97
15A	323	31B	229	48A	317
15B	289	32	225	48B	335
16	277	33	238	49A	329
17A	263	34	186	49B	331
17B	254	35	174	50	148
18A	279	36	227	51	319
18B	328	37A	224	52	174
		37B	170		